What Is Claimed Is:

1. A thin film piezoelectric transducer comprising a first electrode layer, a first piezoelectric film layer, a second electrode layer, a second piezoelectric film layer, and a third electrode layer formed in that order on a substrate, wherein said first and second piezoelectric film layers are constrained so as not to expand or contract in a thickness direction.

2. The thin film piezoelectric transducer, according to Claim 1, wherein said first, second, and third electrode layers are formed of a multilayered structure of platinum and titanium.

3. The thin film piezoelectric transducer, according to Claim 1, wherein said first and second piezoelectric film layers are formed of a lead-titanate-zirconate piezoelectric material.

4. The thin film piezoelectric transducer, according to Claim 1, wherein an arbitrary voltage waveform is input to said first piezoelectric film layer and said arbitrary voltage waveform which has been amplified is output to said second piezoelectric film layer.

5. A thin film piezoelectric transducer wherein a first electrode layer, piezoelectric film layer, second electrode layer, and third electrode layer are formed on a supporting base wherein a cavity is formed; and said second electrode layer and third electrode layer are formed in a pair with a space therebetween on the piezoelectric film layer located above said cavity.

6. The thin film piezoelectric transducer, according to Claim 5, wherein said third electrode layer is formed to span the end surface and upper layer surface of said piezoelectric film layer.

7. The thin film piezoelectric transducer, according to Claim 5, wherein the supporting base wherein said cavity is formed is a single crystal silicon substrate.

8. The thin film piezoelectric transducer, according to Claim 5, comprising a diaphragm formed of a zirconia thin film between said supporting base and said first electrode layer.

9. The thin film piezoelectric transducer, according to Claim 5, wherein said first, second, and third electrode layers are formed of a multilayered structure of platinum and titanium.

10. The thin film piezoelectric transducer, according to Claim 5, wherein said piezoelectric film layer is formed of a lead-titanate-zirconate piezoelectric material.

11. The thin film piezoelectric transducer, according to Claim 5, wherein an arbitrary voltage waveform is applied between said first electrode layer and said second electrode layer, and said arbitrary voltage waveform which has been amplified is output to between said first electrode layer and said third electrode layer.

12. An electrophoretic ink display apparatus comprising a plurality of electrophoretic ink display elements that comprise a plurality of capsules and wherein the color changes due to the movement of charged particles within the capsules; the electrophoretic ink display apparatus further comprising:

a plurality of gate lines, a plurality of data lines intersecting with the gate lines, and thin film transistors disposed at the intersections of said gate lines and data lines;

wherein one source-drain of said thin film transistor is connected to said data line;

another source-drain of said thin film transistor is connected to the input side of said piezoelectric transducer; and

the output side of said piezoelectric transducer is connected to the electrode of the electrophoretic ink display element.

13. The electrophoretic ink display apparatus, according to Claim 12, wherein said piezoelectric transducer is connected vibrateably with the upper portion of said thin film transistor.

14. The electrophoretic ink display apparatus, according to Claim 12, wherein said piezoelectric transducer comprises a first electrode layer, a first piezoelectric film layer, a second electrode layer, a second piezoelectric film layer, and a third electrode layer, layered in that order on an insulating substrate; and

wherein said first and second piezoelectric film layers are constrained so as not to expand or contract in a thickness direction.

15. The electrophoretic ink display apparatus, according to Claim 14, wherein said first and second piezoelectric film layers are constrained so as not to expand or contract in a thickness direction by establishing a columnar structure on the upper portion of said piezoelectric transducer and pressing said columnar structure with an opposite substrate,

whereon the upper electrode of said electrophoretic ink display element is established.

16. The electrophoretic ink display apparatus, according to Claim 14, wherein said third electrode layer also functions as the lower electrode of said electrophoretic ink display element.

17. The electrophoretic ink display apparatus, according to Claim 14, wherein said first, second, and third electrode layers are formed of a multilayered structure of platinum and titanium.

18. The electrophoretic ink display apparatus , according to Claim 14, wherein said first and second piezoelectric film layers are formed of a lead-titanate-zirconate piezoelectric material.

19. The electrophoretic ink display apparatus, according to Claim 14, wherein an arbitrary voltage waveform is input to said first piezoelectric film layer, and said arbitrary voltage waveform which has been amplified is output to said second piezoelectric film layer.

20. The electrophoretic ink display apparatus, according to Claim 12, wherein said piezoelectric transducer comprises a

first electrode layer, piezoelectric film layer, second electrode layer, and third electrode layer formed on a supporting base wherein a cavity is formed; and said second electrode layer and third electrode layer are formed in a pair with a space therebetween on the piezoelectric film layer located above said cavity.

21. The electrophoretic ink display apparatus, according to Claim 20, wherein said third electrode layer is formed to span the end surface and upper layer surface of said piezoelectric film layer.

22. The electrophoretic ink display apparatus, according to Claim 20, wherein the supporting base wherein said cavity is formed is a single crystal silicon substrate.

23. The electrophoretic ink display apparatus, according to Claim 20, wherein said first, second, and third electrode layers are formed of a multilayered structure of platinum and titanium.

24. The electrophoretic ink display apparatus, according to Claim 20, wherein said first and second piezoelectric film layers are formed of a lead-titanate-zirconate piezoelectric material.

25. The electrophoretic ink display apparatus, according to Claim 20, wherein an arbitrary voltage waveform is applied between said first electrode layer and said second electrode layer, and said arbitrary voltage waveform which has been amplified is output between said second electrode layer and said third electrode layer.